Panasonic

Operating Instructions
DVD Home Theater Sound System

Model No. **SC-PT450**

Before connecting, operating or adjusting this product, please read the instructions completely. Please keep this manual for future reference.
Your unit may not look exactly the same as illustrated.

The player plays DVD-Video marked with labels containing the region number "**4**" or "**ALL**".

Wireless system surround sound *page* ***7***
Optional wireless surround speaker connection.

High-quality picture *page* ***24***
HDMI capability, Advanced progressive scan and more.

DVD VIDEO™ COMPACT disc DIGITAL VIDEO RAM COMPATIBLE PLAYER HDMI™ HIGH-DEFINITION MULTIMEDIA INTERFACE VIERA Link

GN

RQTX0066-1L

Dear customer

Thank you for purchasing this product.

For optimum performance and safety, please read these instructions carefully.

Operations in these instructions are described mainly with the remote control, but you can perform the operations on the main unit if the controls are the same.

System	SC-PT450
Main unit	SA-PT450
Front speakers	SB-HF450
Center speaker	SB-HC450
Surround speakers	SB-HS450
Subwoofer	SB-HW550

CAUTION!

THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.
DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

WARNING:

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR PRODUCT DAMAGE,

- **DO NOT EXPOSE THIS APPARATUS TO RAIN, MOISTURE, DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.**
- **USE ONLY THE RECOMMENDED ACCESSORIES.**
- **DO NOT REMOVE THE COVER (OR BACK); THERE ARE NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

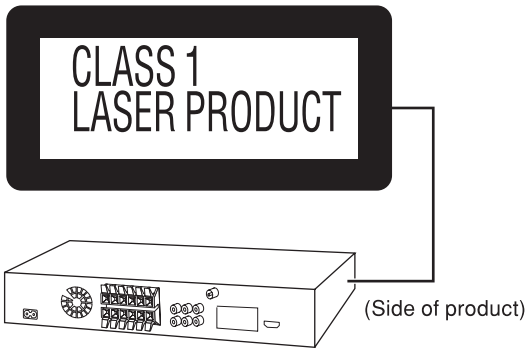
CAUTION!

- **DO NOT INSTALL OR PLACE THIS UNIT IN A BOOKCASE, BUILT-IN CABINET OR IN ANOTHER CONFINED SPACE. ENSURE THE UNIT IS WELL VENTILATED. TO PREVENT RISK OF ELECTRIC SHOCK OR FIRE HAZARD DUE TO OVERHEATING, ENSURE THAT CURTAINS AND ANY OTHER MATERIALS DO NOT OBSTRUCT THE VENTILATION VENTS.**
- **DO NOT OBSTRUCT THE UNIT'S VENTILATION OPENINGS WITH NEWSPAPERS, TABLECLOTHS, CURTAINS, AND SIMILAR ITEMS.**
- **DO NOT PLACE SOURCES OF NAKED FLAMES, SUCH AS LIGHTED CANDLES, ON THE UNIT.**
- **DISPOSE OF BATTERIES IN AN ENVIRONMENTALLY FRIENDLY MANNER.**

The socket outlet shall be installed near the equipment and easily accessible.
The mains plug of the power supply cord shall remain readily operable.
To completely disconnect this apparatus from the AC Mains, disconnect the power supply cord plug from AC receptacle.

This product may receive radio interference caused by mobile telephones during use. If such interference is apparent, please increase separation between the product and the mobile telephone.

THIS UNIT IS INTENDED FOR USE IN MODERATE CLIMATES.



(Side of product)

CAUTION	–	LASER RADIATION WHEN OPEN. DO NOT STARE INTO BEAM. FDA 21 CFR / Class II
CAUTION	–	CLASS 1M VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS. IEC60825-1 +A2/ Class 1M
VARNING	–	KLASS 1M SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. BETRAKTA EJ STRÅLEN DIREKT GENOM OPTISKT INSTRUMENT.
FORSIGTIG	–	SYNLIG OG USYNLIG LASERSTRÅLING KLASS 1M. NÅR LÅGET ER ÅBENT. UNDGÅ AT SE LIGE PÅ MED OPTISKE INSTRUMENTER.
VARO!	–	AVATTAESSA OLET ALTTIINA LUOKAN 1M NÄKYVÄÄ JA NÄKYMÄTÖNTÄ LASERSÄTEILYÄ. ÄLÄ KATSO OPTISELLA LAITTEELLA SUORAAN SÄTEESEEN.
VORSICHT	–	SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG KLASSE 1M, WENN ABDECKUNG GEÖFFNET. NICHT DIREKT MIT OPTISCHEN INSTRUMENTEN BETRACHTEN.
ATTENTION	–	RAYONNEMENT LASER VISIBLE ET INVISIBLE. CLASSE 1M, EN CAS D'OUVERTURE. NE PAS REGARDER DIRECTEMENT À L'AIDE D'INSTRUMENTS D'OPTIQUE.
注意	–	ここを開くと可視及び不可視レーザ光が出ます。ビームを見たり、触れたりしないでください。
注意	–	打开时有可见及不可见激光辐射，避免光束照射。 GB7241.1-2001/3B 类 RQLXS0075

Inside of product

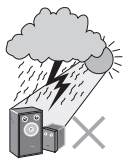
-If you see this symbol-

Information on Disposal in other Countries outside the European Union

This symbol is only valid in the European Union.
If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

Safety precautions

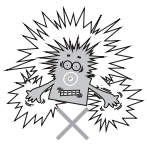
Placement



Set the unit up on an even surface away from direct sunlight, high temperatures, high humidity, and excessive vibration. These conditions can damage the cabinet and other components, thereby shortening the unit's service life.

Do not place heavy items on the unit.

Voltage



Do not use high voltage power sources. This can overload the unit and cause a fire.

Do not use a DC power source. Check the source carefully when setting the unit up on a ship or other places where DC is used.

AC mains lead protection

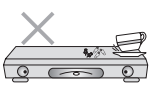
Ensure the AC mains lead is connected correctly and not damaged. Poor connection and lead damage can cause fire or electric shock. Do not pull, bend, or place heavy items on the lead.

Grasp the plug firmly when unplugging the lead. Pulling the AC mains lead can cause electric shock.

Do not handle the plug with wet hands. This can cause electric shock.

Foreign matter

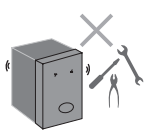
Do not let metal objects fall inside the unit. This can cause electric shock or malfunction.



Do not let liquids get into the unit. This can cause electric shock or malfunction. If this occurs, immediately disconnect the unit from the power supply and contact your dealer.

Do not spray insecticides onto or into the unit. They contain flammable gases which can ignite if sprayed into the unit.

Service



Do not attempt to repair this unit by yourself. If sound is interrupted, indicators fail to light, smoke appears, or any other problem that is not covered in these instructions occurs, disconnect the AC mains lead and contact your dealer or an authorized service center. Electric shock or damage to the unit can occur if the unit is repaired, disassembled or reconstructed by unqualified persons.

Extend operating life by disconnecting the unit from the power source if it is not to be used for a long time.

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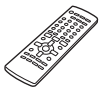
Accessories

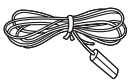
Please check and identify the supplied accessories.

☐ **1 Remote control**
(N2QAYB000093)



☐ **2 Remote control batteries**

☐ **1 FM indoor antenna**



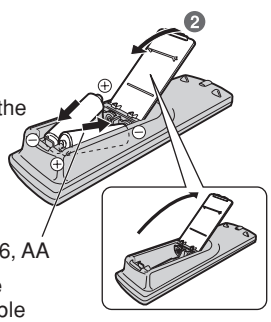
☐ **AC mains leads**

☐ **1 Video cable**

☐ **1 Sheet of speaker cable sticker**

Preparing the remote control

❶ Insert so the poles (+ and –) match those in the remote control.



R6/LR6, AA

- Do not use rechargeable type batteries.

Do not:
- mix old and new batteries.
- use different types of batteries at the same time.
- heat or expose batteries to flame.
- take apart or short circuit the batteries.
- attempt to recharge alkaline or manganese batteries.
- use batteries if the covering has been peeled off.

Mishandling of batteries can cause electrolyte leakage which can severely damage the remote control.

Remove the batteries if the remote control is not going to be used for a long period of time. Store in a cool, dark place.

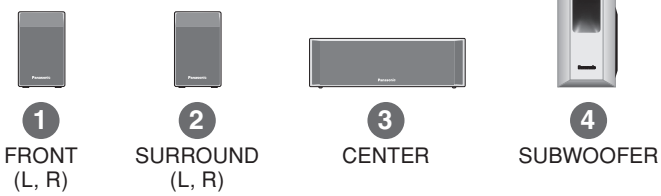
■ Use

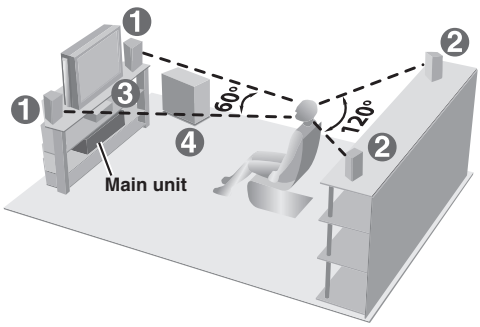
Aim at the remote control signal sensor (➡ page 12), avoiding obstacles, at a maximum range of 7 m directly in front of the unit.

Placement of speakers

Setup example

Place the front, center, and surround speakers at approximately the same distance from the seating position.
The angles in the diagram are approximate.





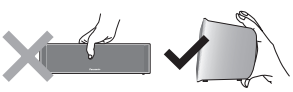
- **Use only supplied speakers**
  Using other speakers can damage the unit, and sound quality will be negatively affected.
- Place speakers on flat secure bases. Take proper precautions to prevent the speakers from falling if you cannot set them up on an even surface.
- Placing speakers too close to floors, walls, and corners can result in excessive bass. Cover walls and windows with thick curtains.

Main unit

- Keep your speakers at least 10 mm away from the system for proper ventilation.
- To allow for proper ventilation and to maintain good airflow around the main unit, position it with at least 5 cm of space on all sides.
- Do not block the ventilation holes of the main unit.

CAUTION!

- Refrain from holding the speaker's net.



Center speaker

- Vibration caused by the center speaker can disrupt the picture if it is placed directly on the television. Put the center speaker on a rack or shelf.
- To prevent the speakers from falling, do not place directly on top of the television.

Subwoofer

- Place to the right or left of the television, on the floor or a sturdy shelf so that it will not cause vibration. Leave a space of 30 cm from the television.

Note

- You can damage your speakers and shorten their useful life if you play sound at high levels over extended periods.
- Reduce the volume in the following cases to avoid damage:
  – When playing distorted sound.
  – When the speakers are reverberating due to a record player, noise from FM broadcasts, or continuous signals from an oscillator, test disc, or electronic instrument.
  – When adjusting the sound quality.
  – When turning the unit on or off.

If irregular coloring occurs on your television

The front and center speakers are designed to be used close to a television, but the picture may be affected with some televisions and setup combinations.

If this occurs, turn the television off for about 30 minutes.

The television's demagnetizing function should correct the problem. If it persists, move the speakers further away from the television.

Caution

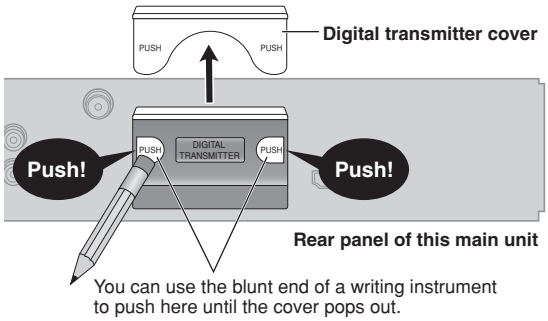
- **The main unit and supplied speakers are to be used only as indicated in this setup. Failure to do so may lead to damage to the amplifier and/or the speakers, and may result in the risk of fire. Consult a qualified service person if damage has occurred or if you experience a sudden change in performance.**
- **Do not attempt to attach these speakers to walls using methods other than those described in this manual.**

Set your surround free!

Optional Panasonic wireless accessory (example: SH-FX65)

You can enjoy surround speaker sound wirelessly when you use the optional Panasonic wireless accessory (example: SH-FX65).
For details, please refer to the operating instructions for the optional Panasonic wireless accessory.

Remove the digital transmitter cover before installing any optional Panasonic wireless accessory.
- Replace the cover when the digital transmitter is not in use.

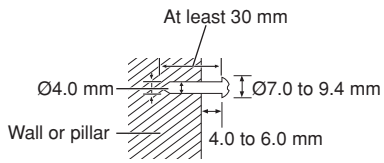


Speaker installation options

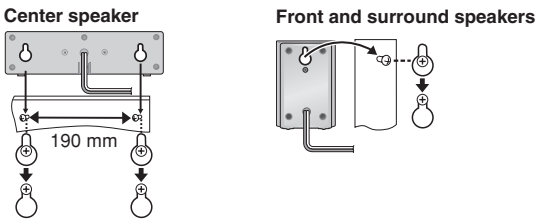
■ Attaching to a wall

You can attach all of the speakers (except subwoofer) to a wall.
- The wall or pillar on which the speakers are to be attached should be capable of supporting 10 kg per screw. Consult a qualified building contractor when attaching the speakers to a wall. Improper attachment may result in damage to the wall and speakers.

① Drive the screw (not included) into the wall



② Fit the speaker securely onto the screw(s) with the hole(s).

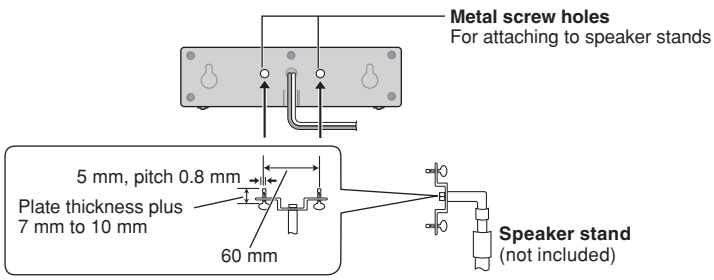


■ Fitting speaker stands (not included)

(For front, center and surround speakers)

Ensure the stands meet these conditions before purchasing them.
Note the diameter and length of the screws and the distance between screws as shown in the diagram.
- The stands must be able to support over 10 kg.
- The stands must be stable even if the speakers are in a high position.

Example: **Center speaker**



Making the connections

Connect the AC mains lead only after all other connections have been made.
• Ensure that you have the complete accessories before making the connections.

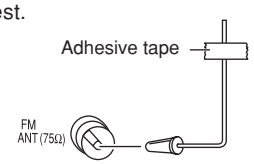
Conserving power
The main unit consumes a small amount of power, even when it is standby mode (approx. 0.8 W). To save power when the unit is not to be used for a long time, unplug it from the household mains socket. You will need to reset some memory items after plugging in the unit.

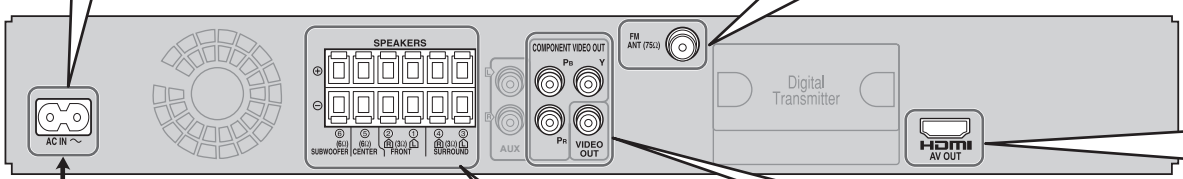
Connect to the power supply.

Note
The included AC mains lead is for use with this unit only. Do not use it with other equipment.

Connect to the antenna.

■ FM indoor antenna
Tape the antenna where reception is the best.

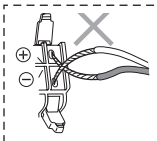




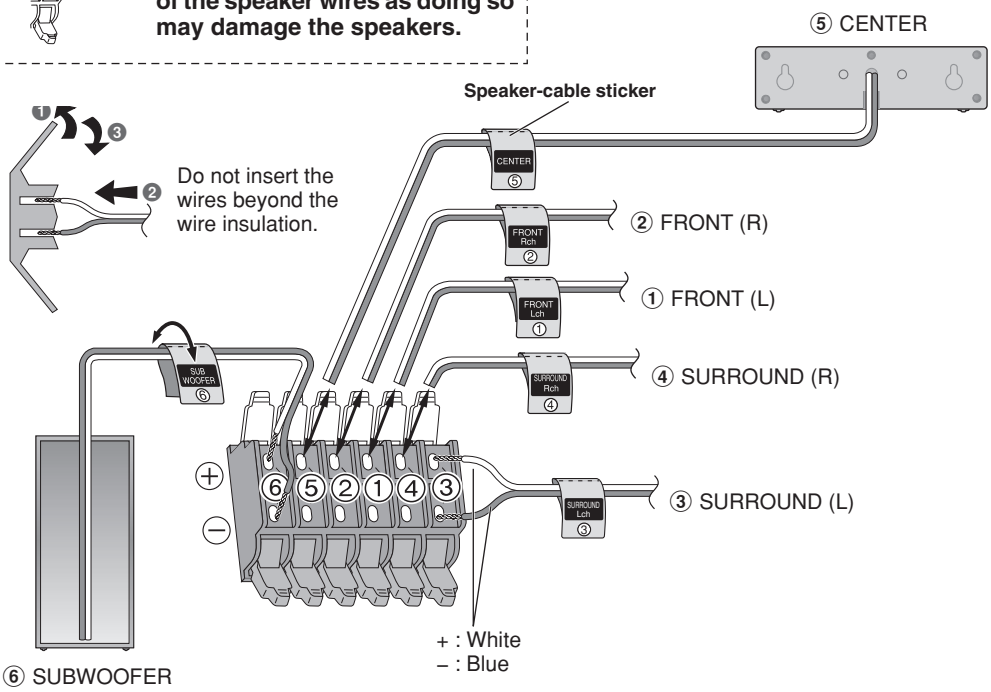
To household mains socket

Connect to the speakers.

Attach the speaker-cable stickers to make connection easier.



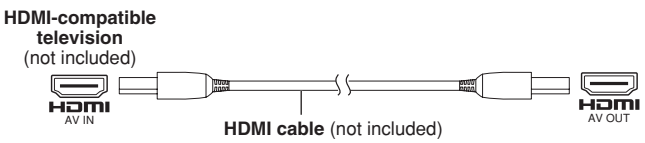
Be careful not to cross (short-circuit) or reverse the polarity of the speaker wires as doing so may damage the speakers.



Connect to the various television terminals.

- Do not connect the unit through a video cassette recorder.
- Due to copy guard protection, the picture may not be displayed correctly.
- Turn the television off before connecting, and refer to the television's operating instructions.

■ Television with an HDMI terminal



Use the HDMI connection to enjoy higher quality audio and video with a single cable.
- Set "Video Mode" to "On" and "Audio Output" to "On" (➡ page 24, "HDMI" tab).
- Set "Video Output Mode" (➡ page 20, Picture Menu).

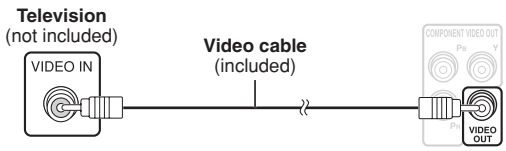
VIERA Link ("HDAVI Control")

If your Panasonic television is a VIERA Link compatible television, you can operate your television synchronising with home theater operations or vice versa (➡ page 32).

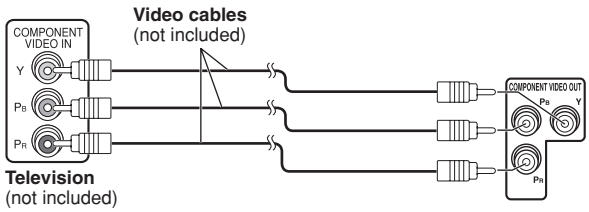
Note

- Make the extra audio connection (➡ page 31) when you use "HDAVI Control" function.
- It is recommended that you use Panasonic's HDMI cable.
  [Recommended part number: RP-CDHG15 (1.5 m), RP-CDHG30 (3.0 m), RP-CDHG50 (5.0 m), etc.]
- Non-HDMI-compliant cables cannot be utilised.

■ Television with a VIDEO IN terminal



■ Television with COMPONENT VIDEO IN terminals



Using the COMPONENT VIDEO OUT terminals

These terminals can be used for either interlaced or progressive output. Connection using these terminals outputs the color difference signals (P_B/P_R) and luminance signal (Y) separately in order to achieve high fidelity in reproducing colors.
- The description of the component video input terminals depends on the television or monitor (example: $Y/P_B/P_R$, Y/B-Y/R-Y, $Y/C_B/C_R$).
- Connect to terminals of the same color.

To enjoy progressive video
- Connect to a progressive output compatible television.
  ① Set "Video Mode" to "Off" (➡ page 24, "HDMI" tab).
  ② Set "Video Output Mode" to "480p" or "576p", and then follow the instructions on the menu screen (➡ page 20, Picture Menu).

Performing QUICK SETUP

The QUICK SETUP screen assists you to make necessary settings.

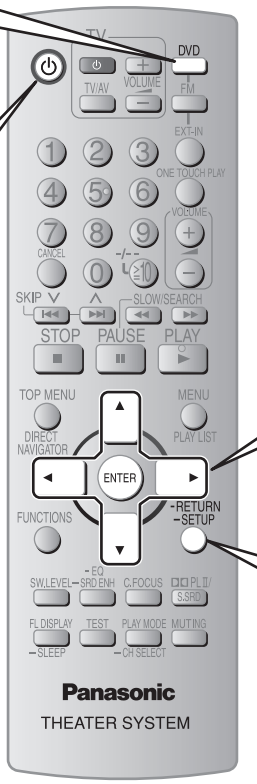
To display the picture from this main unit, switch on the television and change the television's input mode which is connected to this main unit (example : VIDEO 1, AV 1, etc.).

To change your television's input mode, refer to its operating instructions.
- This remote control is able to perform some basic television operations (➡ page 33).

2 Select "DVD/CD".

DVD

1 Switch on the main unit.

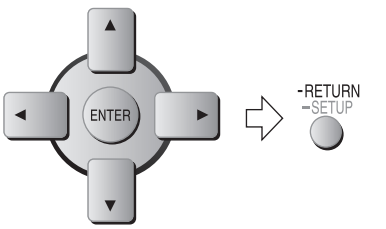


3 Shows the QUICK SETUP screen

RETURN
SETUP

(Press and hold)

4 Follow the messages and make the setting.



5 Finish the QUICK SETUP.

ENTER

6 Press to exit.

RETURN
SETUP

To change these settings later
Select "QUICK SETUP" in "Others" tab (➡ page 25).

■ Details of settings

Menu language Choose the language for the on-screen messages.	• English • (Language options)※
TV Type Select to suit the type of television.	• Standard (Direct View TV) • CRT Projector • LCD TV/Projector • Projection TV • Plasma TV
TV Aspect Choose the setting to suit your television and preference.	• 4:3: Regular aspect television • 16:9: Widescreen television

※ Français, Español, Deutsch, Italiano, Nederlands, Svenska, Polski

- Underlined items in the above table are the factory preset.

Disc information

Discs that can be played

■ Commercial discs

Disc	Logo	Indicated in these instructions by	Remarks
DVD-Video		DVD-V	High quality movie and music discs.
Video CD		VCD	Music discs with video. Including SVCD (Conforming to IEC62107).
CD		CD	Music discs

■ Recorded discs (○: Playable, ×: Not playable)

Disc	Logo	Recorded on a DVD video recorder, etc.		Recorded on a personal computer, etc.			Finalizing※6
		DVD-VR※2	DVD-V※4	WMA	MP3	JPEG	
DVD-RAM		○	—	×	○	○	Not necessary
DVD-R/RW		○	○	×	○	○	Necessary
DVD-R DL		○※3	○	×	×	×	Necessary
+R/+RW	—	×	(○)※5	×	×	×	Necessary
+R DL	—	×	(○)※5	×	×	×	Necessary
CD-R/RW※1	—	—	—	○	○	○	Necessary※7

- It may not be possible to play all the above-mentioned discs in some cases due to the type of disc, the condition of the recording, the recording method, or how the files were created (➡ page 26, Tips for making data discs).

※1 This unit can play CD-R/RW recorded with CD-DA or Video CD format.
WMA MP3 JPEG This unit also plays HighMAT discs.
※2 Discs recorded on DVD video recorders or DVD video cameras, etc. using Version 1.1 of the Video Recording Format (a unified video recording standard).
※3 Discs recorded on DVD video recorders or DVD video cameras using Version 1.2 of the Video Recording Format (a unified video recording standard).
※4 Discs recorded on DVD video recorders or DVD video cameras using DVD-Video Format.
※5 Recorded using a format different from DVD-Video Format, therefore, some functions cannot be used.
※6 A process that allows play on compatible equipment. To play a disc that is displayed as “Necessary” on this unit, the disc must first be finalized on the device it was recorded on.
※7 Closing the session will also work.

Note about using a DualDisc
- The digital audio content side of a DualDisc does not meet the technical specifications of the Compact Disc Digital Audio (CD-DA) format so playback may not be possible.

■ Discs that cannot be played

DVD-RW version 1.0, DVD-Audio, DVD-ROM, CD-ROM, CDV, CD-G, SACD, Photo CD, DVD-RAM that cannot be removed from their cartridge, 2.6-GB and 5.2-GB DVD-RAM, and “Chaoji VCD” available on the market including CVD, DVCD and SVCD that do not conform to IEC62107.

■ Video systems

- This unit can play PAL and NTSC, but your television must match the system used on the disc.
- PAL discs cannot be correctly viewed on an NTSC television.
- This unit can convert NTSC signals to PAL 60 for viewing on a PAL television (➡ page 24, “NTSC Disc Output” in “Video” tab).

Overview of controls

Main unit

►/MEMORY
Disc playback **(14)**,
Memorise the receiving radio stations **(28)**

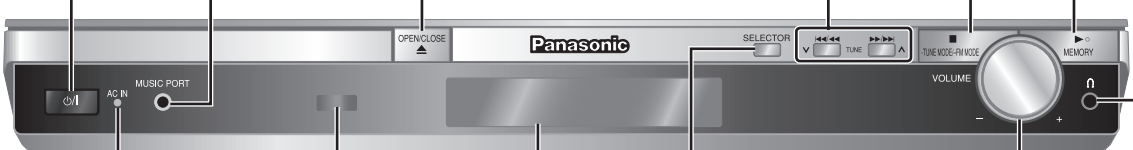
Standby/on switch [⏻/I] (14)
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.

■/- TUNE MODE/– FM MODE
Stop playback, Select the tuning mode **(28)**,
Adjust the FM reception condition **(28)**

MUSIC PORT jack
Connect an external device **(31)**

▲ OPEN/CLOSE
Open or close the disc tray **(14)**

I◄◄/◄◄, ►►/►►I / ∨ TUNE ∧
Skipping or slow-search play,
Select the radio stations **(28)**



Display

Remote control signal sensor

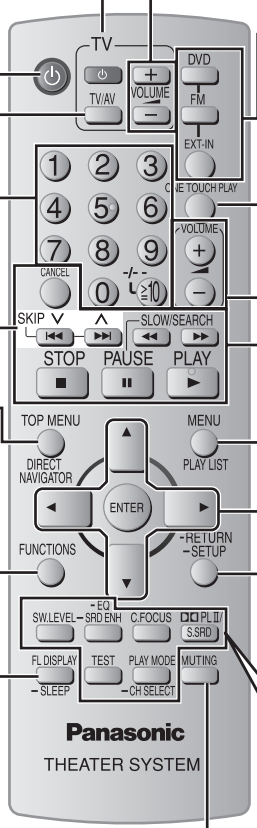
VOLUME –, +
Turn the volume up or down **(14)**

AC supply indicator [AC IN]
This indicator lights when the unit is connected to the AC mains supply.

SELECTOR (14, 28)
→ MUSIC P. → DVD/CD → FM → AUX →

Headphone plug type:
Ø3.5 mm stereo mini plug
- Reduce the volume before connecting.
- Audio is automatically switched to 2-channel stereo.
- To prevent hearing damage, avoid listening for prolonged periods of time.

Remote control



Television operations **(33)**

Switch the main unit on or off **(14)**

Change the television's video input mode **(33)**

Select disc's title numbers and etc., Enter numbers **(15)**

Select preset radio stations **(28)**

Show a disc top menu **(15)** or program list **(15)**

Show on-screen menu **(19)**,

Show the display on the main unit **(15)**,
This function enables you to turn off the unit automatically after the set time
SLEEP 30 → SLEEP 60 → SLEEP 90
↑ OFF ← SLEEP 120 ←

To cancel the timer
Press and hold [–SLEEP] to select "OFF".
To confirm the remaining time
Press and hold [–SLEEP] again.

Adjust the television volume **(33)**

Select the source
DVD: DVD/CD **(10)**
FM (28)
EXT-IN: AUX **(31)**, MUSIC P. **(31)**

Start up and play a disc automatically, Control both the home theater system and the television **(32)**

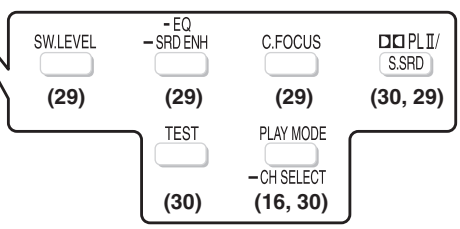
Adjust the volume of the main unit **(30)**

Basic operations for play **(15)**

Show a disc menu or play list **(15)**

Select or confirm menu items on the television screen **(10)**, Frame-by-frame **(15)**

Return to previous screen **(15)**
Show the Setup menu **(10)**



To mute the sound
To cancel
- Press [MUTING] again or adjust the volume.
- Muting is cancelled when you switch the unit to standby.

Using the main unit

1 Power on.

2 Select "DVD/CD".

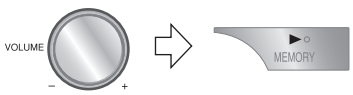
SELECTOR

3 Load a disc in the tray.

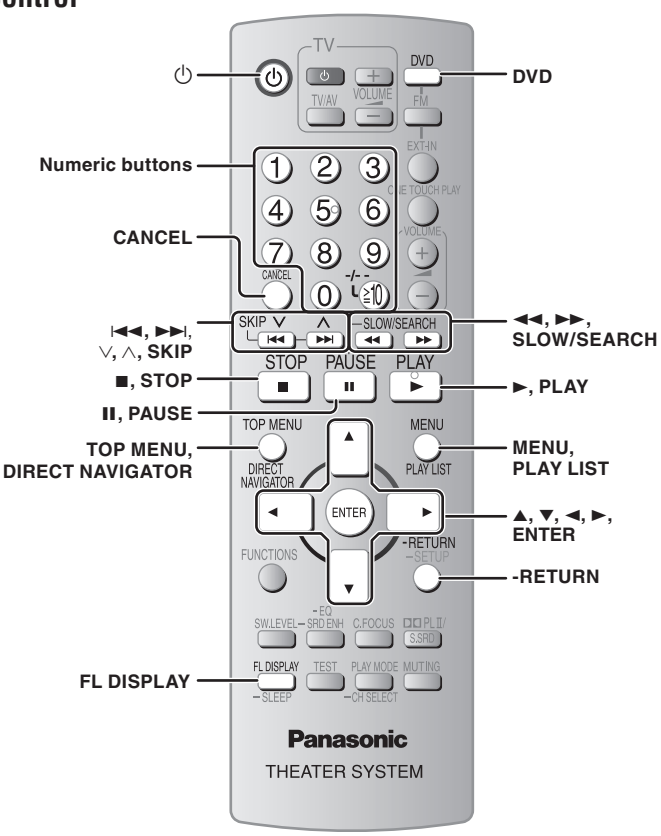
OPEN/CLOSE

- Load double-sided discs so the label for the side you want to play is facing up.
- For DVD-RAM, remove the disc from its cartridge before use.

4 Adjust the volume and start playback.



Using the remote control



Stop

STOP ■ The position is memorised while "RESUME" is on the display.
- Press [►, PLAY] to resume.
- Press [■, STOP] again to clear the position.

Pause

PAUSE ❚❚
- Press [►, PLAY] to resume playback.

Search (during play)

SLOW/SEARCH ◄◄ ►►
- Play speed increases up to 5 steps.
- Press [►, PLAY] to resume normal playback.

Slow-motion play (during pause)

SLOW/SEARCH ◄◄ ►►
- Play speed increases up to 5 steps.
- VCD Slow motion play is for forward direction only.
- Press [►, PLAY] to resume normal playback.

Main unit display

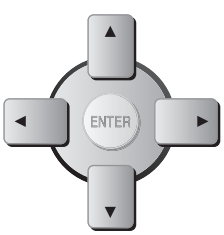
FL DISPLAY / SLEEP

DVD-V DVD-VR WMA MP3
Time display ↔ Information display

JPEG
When Slideshow (➡ page 20) is on:
SLIDE ↔ Information display
When Slideshow (➡ page 20) is off:
PLAY ↔ Information display

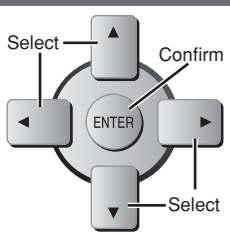
Skip

SKIP ∨ ∧ ⏮ ⏭ ——



WMA MP3 JPEG
[▲, ▼]: Group skip
[◄, ►]: Content skip
- This feature does not work during program and random play (➡ page 16).

On-screen item select



——

Enter numbers

1 2 3
4 5 6
7 8 9
0 -/- -- ≧10

DVD-V (while stopped) DVD-VR VCD CD
Example: To select 12,
-/- - ≧10 ⇨ 1, 2

VCD with Playback control (PBC)
Press [■, STOP] and then press the numeric buttons to cancel the PBC functions.

Note
- The numeric buttons that can function depend on the number of tracks on the VCD.

ENTER

WMA MP3 JPEG
Example: To select 123,
1, 2, 3 ⇨ ENTER

Cancel the numbers

CANCEL ——

Disc menus

TOP MENU — DVD-V
Shows a disc top menu.

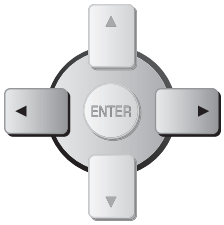
DIRECT NAVIGATOR — DVD-VR
Shows the program (➡ page 18).

MENU — DVD-V
Shows a disc menu.

PLAY LIST — DVD-VR
Shows the playlist (➡ page 18).

-RETURN / -SETUP — VCD with Playback control (PBC)
Shows a disc menu.

Frame-by-frame (during pause)



DVD-V DVD-VR VCD
- VCD Forward direction only.

Return to previous screen

-RETURN / -SETUP ——

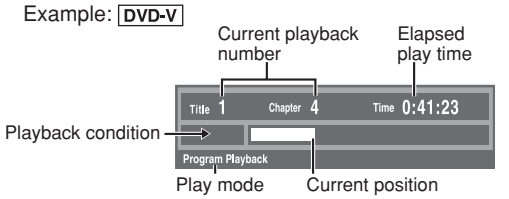
Note
- **DISC CONTINUES TO ROTATE WHILE MENUS ARE DISPLAYED.**
  Press [■, STOP] when you finish to preserve the unit's motor and your television screen.
- Total title number may not be displayed properly on +R/+RW.

Displaying current playback condition

FUNCTIONS → Functions Menu → Basics → Details (➡ page 19) → Off (No on-screen display) →

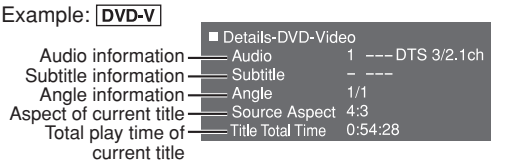
■ Basics

Example: DVD-V



■ Details

Example: DVD-V



Program and Random play

DVD-V VCD CD WMA MP3 JPEG

PLAY MODE / CH SELECT (during stop)

Program → Random → Off (Normal play)

To exit program or random play mode while stopped.

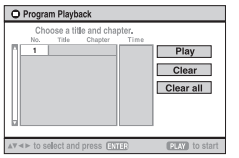
PLAY MODE / CH SELECT (several times)

- Selecting "Play as Data Disc" in Other Menu (➡ page 22) will be effective if the following functions are not available to play WMA, MP3 or JPEG contents.
- DVD-V Some items cannot be played even if you have programmed them.

Program play (up to 32 items)

1 Press the numeric buttons to select the item. (WMA MP3 JPEG Press [ENTER] to register the selection.)

Example: DVD-V



- Repeat this step to program other items.
- To select a 2-digit number
  Example: To select 12,

-/- - → ≥10 → 1, 2

WMA MP3 JPEG

1, 2 → ENTER

2 PLAY ►

To select an item using the cursor buttons

Press [ENTER] and [▲, ▼] to select an item, then press [ENTER] again to confirm.

To select all the items

While the "Chapter", "Track" or "Content" field is highlighted, press [▲, ▼] to select "ALL". Then press [ENTER] again to confirm.

Example: DVD-V

To change the selected program

1. Press [▲, ▼] to select the program number.
2. Press the numeric buttons to change each item. (WMA MP3 JPEG Press [ENTER] to confirm the selection.)

To clear the selected program

1. Press [▲, ▼] to select the program number.
2. Press [CANCEL] (or press [▲, ▼, ◄, ►] to select "Clear" and press [ENTER]).

To clear the whole program

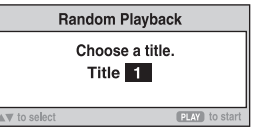
Select "Clear all" with [▲, ▼, ◄, ►] and press [ENTER]. The whole program is also cleared when the unit is turned off, the disc tray is opened or another source is selected.

Random play

1 DVD-V WMA MP3 JPEG

Press the numeric buttons to select a group or title. (WMA MP3 JPEG Press [ENTER] to register the selection.)

Example: DVD-V



Discs which have multiple groups.

- To deselect a group, press numeric buttons corresponding to the group you want to clear.

2 PLAY ►

Playing data discs using navigation menus

Playing data discs

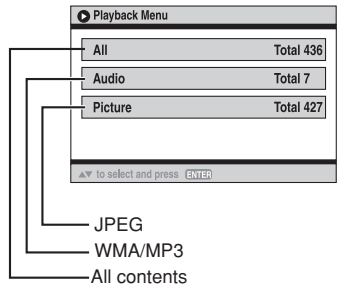
WMA MP3 JPEG

Selecting “Play as Data Disc” in Other Menu (➡ page 22) will be effective if the following functions are not available to play WMA, MP3 or JPEG contents.

- Playing HighMAT™ discs (➡ page 18).

Playing items in order (Playback Menu)

1 TOP MENU / DIRECT NAVIGATOR



2 To select “All”, “Audio” or “Picture”.

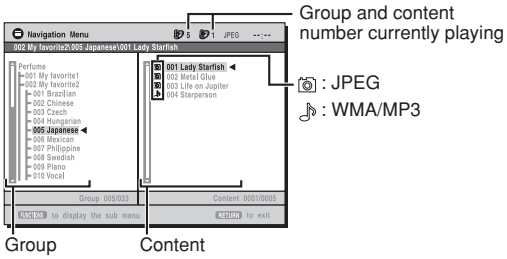
▲, ▼ ➡ ENTER

To exit the screen

Press [TOP MENU].

Playing from the selected item (Navigation Menu)

1 MENU / PLAY LIST



2 To select the group.

◄ ➡ ▲, ▼ ➡ ENTER

3 To play content in the group in order.

ENTER

To start play from the selected content.

▲, ▼ ➡ ENTER

To enjoy listening to WMA/MP3 contents while showing a JPEG image on the screen

Select a JPEG file first, and then select audio contents. (The opposite order is not effective.)

To exit the screen

Press [MENU].

■ Using the submenu

1 While the Navigation Menu is displayed

FUNCTIONS

2 To select an item.

▲, ▼ ➡ ENTER

Items shown differ depending on the type of disc.

✓Multi	Groups and contents are displayed
List	Contents only
Tree	Groups only
Thumbnail	Thumbnail images JPEG
Next group	To go to next group WMA MP3
Previous group	To go to previous group WMA MP3
All	WMA/MP3 or JPEG
Audio	WMA/MP3 only
Picture	JPEG only
Help display	To switch between guide messages and the elapsed play time indicator
Find	To search by content or group title (➡ see below)

■ Searching by a content or a group title

Highlight a group title to search the group, or a content title to search its content.

1 While the submenu is displayed (➡ see above)
To select “Find”.

▲, ▼ ➡ * A Find

2 To select a character.

▲, ▼ ➡ ENTER

- Repeat to enter another character.
- Lower case is also searched.
- Press [◄◄, ►►] to skip between A, E, I, O and U.
- Press [◄] to erase a character.
- Leave the asterisk (✱) when you search for the titles including the character you enter.
- Erase the asterisk (✱) to search for the titles starting with the character you enter. To add the asterisk (✱) again, display the submenu again and select “Find”.

3 To select “Find”.

► ➡ ENTER

The search result screen appears.

4 To select the content or group.

▲, ▼ ➡ ENTER

Playing HighMAT™ discs

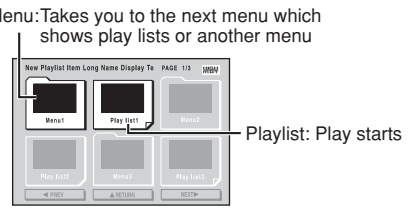
WMA MP3 JPEG

1 TOP MENU / DIRECT NAVIGATOR

2 **To select the item.**

▲, ▼, ◄, ► ⇨ ENTER

- Repeat this step if necessary.
  Example:



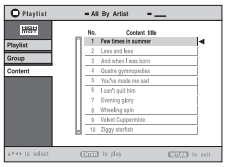
To change the menu background
Press [FUNCTIONS].
The background changes to the one recorded on the disc.

To exit the screen
Press [■, STOP].

Selecting from the list

1 ***During play***

MENU / PLAY LIST ⇨



2 **To switch among "Playlist", "Group" and "Content" lists.**

◄ ⇨ ▲, ▼

3 **To select an item**

► ⇨ ▲, ▼ ⇨ ENTER

To exit the screen
Press [MENU].

Playing RAM and DVD-R/-RW (DVD-VR) discs

DVD-VR

- Titles appear only if the titles are recorded on the disc.
- You cannot edit programs, playlists and disc titles.

Playing the programs

1 TOP MENU / DIRECT NAVIGATOR

2 **To select the program.**

▲, ▼

- Press [►] to show the contents of the program and the disc.

3 ENTER

To exit the screen
Press [DIRECT NAVIGATOR].

Playing a playlist

Applicable only when the disc contains a playlist.

1 MENU / PLAY LIST

2 **To select the playlist.**

▲, ▼

3 ENTER

To exit the screen
Press [PLAY LIST].

Playing the selected track in the CD Text disc

CD

Titles appear with CD Text disc playback.

1 TOP MENU / DIRECT NAVIGATOR **OR** MENU / PLAY LIST ⇨

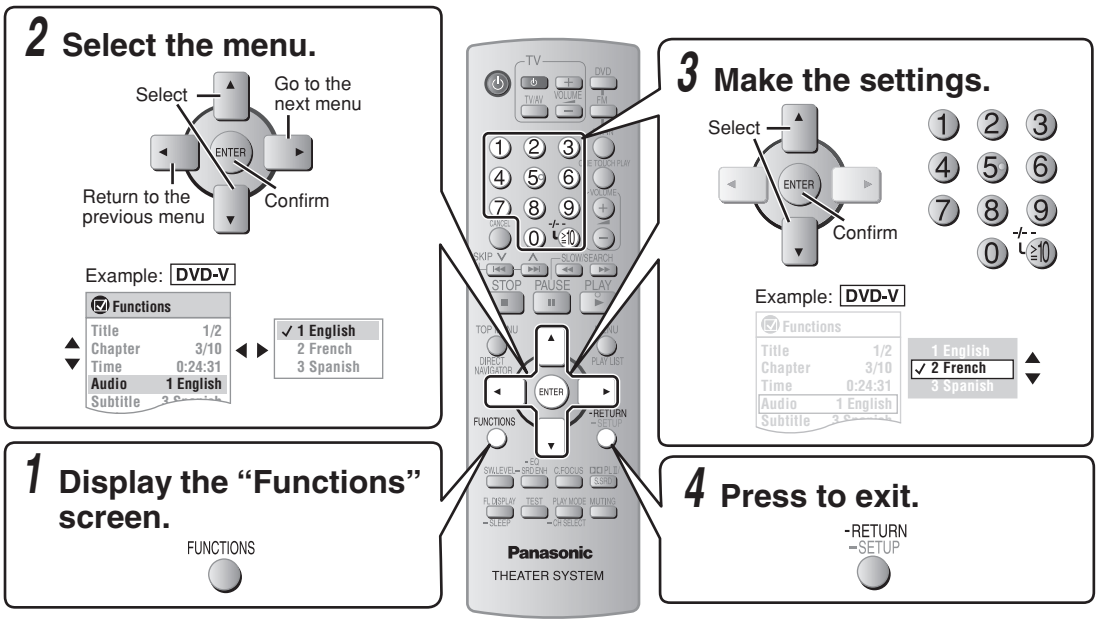
2 **To select the track.**

▲, ▼ ⇨ ENTER

- Press [FUNCTIONS] to show the playback condition and current position.

To exit the screen
Press [TOP MENU] or [MENU].

Using on-screen menus



Items shown differ depending on the type of disc as well as the recording format.

Functions Menu

Program **Group** **Title** **Chapter** **Track** **Playlist** **Content**	**To start from a specific item** Example: DVD-VR To select program 12 Press the numeric buttons: 1, 2 ⇨ ENTER Functions Program 2/16 Time 0:34:15 Audio Program Search ⇕ 12
Time	(Time Slip does not work with +R/+RW discs.) **To skip incrementally or decrementally (Time slip)** (during play) 1. Press [ENTER] twice to show the Time Slip indicator. 2. Press [▲, ▼] to select the time and press [ENTER]. • To change the steps quickly, press and hold [▲, ▼]. **To change the elapsed or remaining time display**
Audio	DVD-V (with multiple soundtracks) **To select audio soundtrack** DVD-VR VCD **To select "LR", "L", "R" or "L+R"** DVD-V (Karaoke disc) **To select "ON" or "OFF" for vocals** **To select "OFF", "V2", "V1" or "V1+V2" for different vocal selections** • Read the disc's instructions for details.

Audio	**Signal type/data** LPCM/PPCM/Digital/DTS/MP3/MPEG: Signal type kHz (Sampling frequency)/bit/ch (Number of channels) Example: 3 /2 .1ch .1: Low frequency effect (not displayed if there is no signal) 0: No surround 1: Mono surround 2: Stereo surround (left/right) 1: Center 2: Front left + Front right 3: Front left + Front right + Center
	WMA MP3 **To display the current bitrate or sampling frequency**
Number Select	VCD with playback control **To select number** While the disc menu is displayed Press [▲, ▼] ⇨ Press [ENTER] • To change the numbers more quickly, press and hold [▲, ▼].
Thumbnail	JPEG **To show thumbnail images**
Subtitle	DVD-V (with multiple subtitles) VCD (SVCD only) **To select subtitle language** • On +R/+RW, a subtitle number may be shown for subtitles that are not displayed. • DVD-VR "On" or "Off" appears only with discs that contain subtitle on/off information (Subtitle on/off information cannot be recorded using Panasonic DVD Recorders).

Functions Menu (continued)

Marker (VR)	DVD-VR **To recall a marker recorded on DVD-Video recorders** Press [▲, ▼] ⇨ Press [ENTER]
Angle	(with multiple angles) **To select a video angle**
Rotate Picture	**To rotate pictures**
Slideshow	**To turn the slideshow on/off** **On ↔ Off** **To change the slideshow timing** **1 (Fast) to 5 (Slow)**
Other Settings	(➡ see below)

Other Settings

Play Speed	DVD-V DVD-VR **To change play speed** – from “x0.6” to “x1.4” • Press [►, PLAY] to resume normal playback. • After you change the speed – Dolby Pro Logic II has no effect. – Audio output switches to 2-channel stereo. – Sampling frequency of 96 kHz is converted to 48 kHz. • This function may not work depending on the disc’s recording.

■ Play Menu

Repeat	(Only when the elapsed play time can be displayed.) DVD-V : Off → Chapter → Title※ DVD-VR : Off → Program → All During playlist play: Off → Scene → Playlist VCD CD : Off → Track → All WMA MP3 : Off → Content → Group※ JPEG : Off → Group※ ※ “All” is displayed during, program or random play.
A-B Repeat	Except DVD-VR (Still picture part) JPEG **To repeat a specified section** Press [ENTER] at the starting and ending points. Press [ENTER] again to cancel.
Advanced Disc Review	DVD-V (Except +R/+RW) DVD-VR (Except still picture part) Allows you to browse the disc contents and start playing from the selected position. You can select either “Intro Mode” or “Interval Mode” in “Advanced Disc Review” in the “Disc” tab (➡ page 23). Example: DVD-VR Press [►, PLAY] when you find a title or program of your choice. • This may not work depending on the disc and the play position. • DVD-VR This does not work when playing a playlist (➡ page 18).

■ Picture Menu

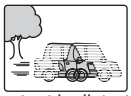
Picture Mode	**Normal** **Cinema1** : Mellows images and enhances detail in dark scenes. **Cinema2** : Sharpens images and enhances detail in dark scenes. **Animation** : Suitable for animation. **Dynamic** : Enhances the contrast for powerful images. **User** : Press [ENTER] to select “**Picture Adjustment**” (➡ see below). **Picture Adjustment** **Contrast** : Increases the contrast between light and dark parts of the picture. **Brightness** : Brightens the picture. **Sharpness** : Adjusts the sharpness of the edges of horizontal lines. **Colour** : Adjusts the shade of the picture’s color. **Gamma** : Adjusts the brightness of dark parts. **Depth Enhancer** : Reduces the rough noise in the background to give a greater feeling of depth.
Video Output Mode	**To select suitable picture quality with your television** (Video recordings will be converted to, and output as, high-definition video.) When HDMI connection is being used and “Video Mode” (➡ page 24, “HDMI” tab) is set to “On” ※**480p/576p/720p/1080p** (progressive) ※**480i/576i/1080i** (interlace) • Select a video output with an “✱” mark. The “✱” mark shows that the video output is acceptable with your television. • Selecting a video output without an “✱” mark can result in the picture being distorted. If the picture is distorted, press and hold [CANCEL] until the picture is displayed correctly. • Output from the COMPONENT VIDEO OUT terminals will be “480i” or “576i”. When HDMI connection is **not** being used and “Video Mode” (➡ page 24, “HDMI” tab) is set to “Off” ※**480p/576p** (progressive) ※**480i/576i** (interlace) When you select “xxx※p” (progressive) and a confirmation screen appears, select “Yes” only if connecting to a progressive output compatible television. ※ The numbers displayed depend on the disc being played. One of the above numbers is displayed.

■ Picture Menu (continued)

Transfer Mode

If you have chosen "xxx×p" (progressive) or "1080i" (interlace) (➡ page 20, "Video Output Mode"), select the method of conversion for progressive output to suit the type of material.
- The setting will return to Auto or Auto1 when the disc tray is opened, the unit is turned off or another source is selected.

When playing PAL discs or video contents
Auto : Automatically detects the film and video content, and appropriately converts it.
Video : Select when using Auto, and the content is distorted.
Film : Select this if the edges of the film content appear jagged or rough when Auto is selected.



However, if the video content is distorted as shown in the illustration to the right, then select Auto.

When playing NTSC discs
Auto1 : Automatically detects the film and video content, and appropriately converts it.
Auto2 : In addition to Auto1, automatically detects film contents with different frame rates and appropriately converts it.
Video : Select when using Auto1 and Auto2, and the content is distorted.

HD Picture Enhancer

This works when the HDMI connection is being used and "Video Mode" (➡ page 24, "HDMI" tab) is set to "On".

To sharpen the "720p", "1080i"and "1080p" picture quality

Off ↔ **1** ↔ **2** ↔ **3** (sharpest picture)

HDMI Colour Space

This works when the HDMI connection is being used and "Video Mode" (➡ page 24, "HDMI" tab) is set to "On".

To select suitable picture colour with your television
RGB
YCbCr (4:4:4)
YCbCr (4:2:2)
- If the setting above is not compatible with your television, it will not be displayed.
- "RGB Range" (➡ page 24, "HDMI" tab) is available when "RGB" is selected.

■ Audio Menu

Dolby Pro Logic II

(➡ page 30, Dolby Pro Logic II)

Dialogue Enhancer

To make the dialogue in movies easier to hear
DVD-V (Dolby Digital, DTS, MPEG, 3-channel or higher, with the dialogue recorded in the center channel)

■ Display Menu

Information

JPEG : **On** ↔ **Off**

Subtitle Position

0 to –60

Subtitle Brightness

Auto, 0 to –7

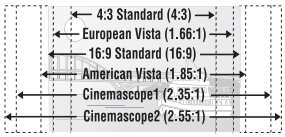
4:3 Aspect

To select how to show images made for 4:3 aspect screens on a 16:9 aspect television
Normal : Laterally stretches images.
Auto : Expands 4:3 letterbox images to fill more of the screen. Other images appear in full in the center of the screen.
Shrink : Images appear in the center of the screen.
Zoom : Expands to 4:3 aspect ratio.
If your television has a similar feature, use it instead for a better effect.

Just Fit Zoom

DVD-V DVD-VR VCD
To select the appropriate screen size to fit your television screen
Auto
4:3 Standard
European Vista
16:9 Standard
American Vista
Cinemascope 1
Cinemascope 2

Example:



Other Settings (continued)

■ Display Menu (continued)

Manual Zoom	**To zoom in and out manually** – in 0.01-unit steps from “x1.00” to “x1.60” – in 0.02-unit steps from “x1.60” to “x2.00” • To change the steps quickly, press and hold [▲, ▼].
Bit Rate Display	DVD-V DVD-VR VCD **On ↔ Off**
GUI See-through	**To make the on-screen menu transparent** **Off, On, Auto**
GUI Brightness	**To adjust the on-screen menu brightness** **–3 to +3**
HDMI Status	Indicates various information when connected with HDMI AV OUT terminal. (➡ see below, Confirming HDMI information)

■ Other Menu

Setup	(➡ page 23)
Play as DVD-VR, Play as HighMAT or **Play as Data Disc**	**To use functions for data discs (➡ page 17)** (To play MP3, JPEG or video contents on DVD-RAM, or to play a HighMAT disc without using HighMAT function) Select “Play as Data Disc”.

Confirming HDMI information

Example:

■ HDMI Status — HDMI is connected. — Connection status

HDMI Information

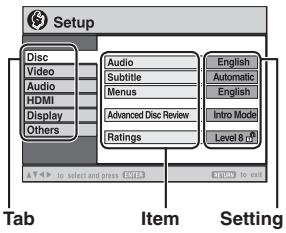
Audio Stream	PCM	Shows the output signal type.
Max Channel	2ch	Shows the number of audio channels.
Colour Space	YCbCr (4:4:4)/YCbCr (4:2:2)/RGB	(➡ page 21, HDMI Colour Space)
Video Format	480i/576i/480p/576p 720p/1080i/1080p	(➡ page 21, Video Output Mode)

Note

All possible types of output are displayed.

- The current output for “Audio Stream”, “Video Format” and “Colour Space” (or “Color Space”) will be underlined. (If you select a video output without an “✱” mark in the “Video Output Mode” in Picture Menu, the selected video format will not be underlined.)
- When “Off” is selected in “Audio Output” (➡ page 24, “HDMI” tab), “– – –” will be displayed in “Audio Stream” and “Max Channel”.

Changing the player settings

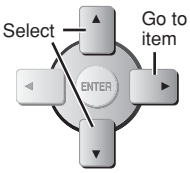


- If you have not performed QUICK SETUP (➡ page 10), the QUICK SETUP screen appears.

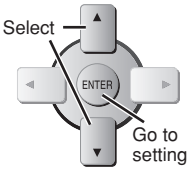
1 Display the Setup menu.

(Press and hold)

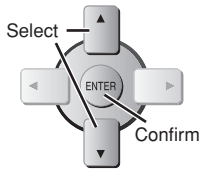
2 Select the tab.

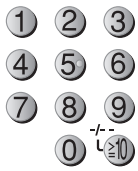


3 Select the item.



4 Make the settings.





5 Press to exit.

- The settings remain intact even if you switch the unit to standby.
- Underlined items are the factory settings in the following table.

QUICK SETUP enables successive settings of the items in the shaded area.

Player settings

■ "Disc" tab

Audio Choose the audio language.	• <u>English</u>	• (Language options)※1	• Original※2	• Other ✱✱✱✱※3
Subtitle Choose the subtitle language.	• <u>Automatic</u>※4	• English	• (Language options)※1	• Other ✱✱✱✱※3
Menus Choose the language for disc menus. Changing the menu language in QUICK SETUP also changes this setting.	• <u>English</u>	• (Language options)※1		
	• Other ✱✱✱✱※3			
Advanced Disc Review (➡ page 20)	• <u>Intro Mode</u>: Reviews each title or program. • Interval Mode: Reviews not only each title or program but also each 10-minute interval within a title or program.			
Ratings Set a ratings level to limit DVD-Video play.	Setting ratings (When level 8 is selected) • <u>8 No Limit</u> • 1 to 7 • 0 Lock All: To prevent play of discs without rating levels.			
	Changing ratings (When level 0 to 7 is selected) • Unlock Player • Change Password • Change Level • Temporary Unlock			
	When you select your ratings level, a password screen is shown. Follow the on-screen instructions. **Do not forget your password.** A message screen will be shown if a DVD-Video disc exceeding the ratings level is inserted in the unit. Enter your password and then follow the on-screen instructions.			

※1 French, Spanish, German, Italian, Dutch, Swedish and Polish
※2 The original language designated on the disc is selected.
※3 Input a code number referring to the table (➡ page 39).
※4 If the language selected for "Audio" is not available, subtitle appears in that language (if available on the disc).

QUICK SETUP enables successive settings of the items in the shaded area.

Player settings (continued)

■ "Video" tab

TV Aspect Choose the setting to suit your television and preference.	• 4:3 Pan&Scan: Regular aspect television (4:3) The sides of the widescreen picture are cut off so it fills the screen (unless prohibited by the disc).
	• 4:3 Letterbox: Regular aspect television (4:3) Widescreen picture is shown in the letterbox style.
	• 16:9: Widescreen television (16:9)
TV Type Select to suit the type of television.	• Standard (Direct View TV) • CRT Projector • LCD TV/Projector • Projection TV • Plasma TV
Time Delay When connected with a Plasma display, adjust if you notice the audio is out of sync with the video.	• 0ms • 20ms • 40ms • 60ms • 80ms • 100ms
Still Mode Specify the type of picture shown when paused.	• Automatic [5]• Field: The picture is not blurred, but picture quality is lower. [5]• Frame: Overall quality is high, but the picture may appear blurred.
NTSC Disc Output Choose PAL 60 or NTSC output when playing NTSC discs (➡ page 11, Video systems).	• PAL60: When connected to a PAL television. • NTSC: When connected to an NTSC television.

■ "Audio" tab

Dolby Digital[6]	• Bitstream • PCM	Select to suit the type of equipment you connected to the HDMI AV OUT terminal (➡ page 9). Select "Bitstream" when the equipment can decode the bitstream (digital form of multi-channel data). Otherwise, select "PCM". (If the bitstream is output to the equipment without a decoder, high levels of noise can be output and may damage your speakers and hearing.)
DTS Digital Surround[6]	• Bitstream • PCM	
MPEG[6]	• PCM • Bitstream	
Dynamic Range Compression	• Off • On: Adjust for clarity even when the volume is low by compressing the range of the lowest sound level and the highest sound level. Convenient for late night viewing. (Only works with Dolby Digital)	
Speaker Settings (➡ page 25) Set the delay time for your center and surround speakers	• Center: 0.0/1.0/2.0/3.0/4.0/5.0 ms • Surround (L/R): 0.0/5.0/10.0/15.0 ms	

■ "HDMI" tab

RGB Range Set "HDMI Colour Space" to "RGB" (➡ page 21, Picture Menu).	• Standard • Enhanced: When the black and white images are not distinct.
Video Mode (This setting is irrelevant when connected through the VIDEO OUT terminal).	• On: When connected through the HDMI AV OUT terminal. Video is output from the HDMI terminal. Video is also output from the COMPONENT VIDEO OUT terminal, but only in 480i or 576i (interlace). • Off: When connected through the COMPONENT VIDEO OUT terminal. Video is output from the COMPONENT VIDEO OUT terminal according to the setting of the "Video Output Mode" (➡ page 20, Picture Menu) terminal. Video is also output from the HDMI AV OUT terminal, but only in 480p/576p (progressive).
Audio Output	• On: When audio output is from the HDMI AV OUT terminal. (Depending on the capabilities of the connected equipment, audio output may differ from the audio settings of the main unit.) • Off: When audio output is not from the HDMI AV OUT terminal. (The audio is output using the settings of the main unit.)
VIERA Link ("HDAVI Control")	• On: The VIERA Link "HDAVI Control" function is available (➡ page 32). • Off

[5] Refer to "Frame still and field still" (➡ page 37, Glossary).
[6] When audio is output from HDMI AV OUT terminal, and the connected equipment does not support the item selected, the actual output will depend on the performance of this connected equipment.

Player settings (continued)

■ "Display" tab

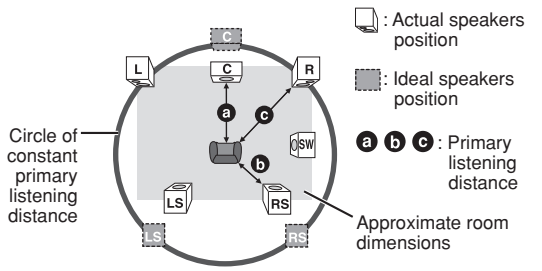
Menu Language	• English • Français • Español • Deutsch • Italiano • Nederlands • Svenska • Polski
On-Screen Messages	• On • Off

■ "Others" tab

FL Dimmer Change the brightness of the unit's display.	• Bright • Dim • Auto: The display is dimmed, but brightens when you perform some operations.
QUICK SETUP	• Yes • No
Re-initialise Setting This returns all values in the Setup menus to the default settings.	• Yes: The password screen is shown if "Ratings" (➡ page 23) is set. Please enter the same password. After "INIT" on the display disappears, turn the unit off and on again. • No

Changing the delay time of the speakers

Effective when playing multi-channel audio
(Center and surround speakers only)
For optimum listening with 5.1-channel sound, all the speakers, except for the subwoofer, should be the same distance from the seating position. If you have to place the center or surround speakers closer to the seating position, adjust the delay time to make up for the difference.



If either distance ❶ or ❷ is less than ❸, find the difference in the table and change to the recommended setting.

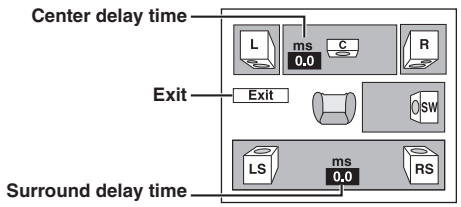
❶ Center speaker	
Difference (Approx.)	Setting
30 cm	1.0 ms
60 cm	2.0 ms
90 cm	3.0 ms
120 cm	4.0 ms
150 cm	5.0 ms

❷ Surround speaker	
Difference (Approx.)	Setting
150 cm	5.0 ms
300 cm	10.0 ms
450 cm	15.0 ms

■ To enter the speaker setting

1 Press [▲, ▼] to select the delay time box and press [ENTER].

2 Press [▲, ▼] to adjust the delay time and press [ENTER].



■ To finish the speaker setting

Press [◄] to select "Exit" and press [ENTER].

Note

When you change the surround speaker setting for Dolby Digital, the setting also changes for Dolby Pro Logic II.
Example: the settings for MUSIC are the same as those for Dolby Digital.

Dolby Digital	Dolby Pro Logic II	
	MUSIC	MOVIE
0 ms	0 ms	10 ms
5 ms	5 ms	15 ms
10 ms	10 ms	20 ms
15 ms	15 ms	25 ms

Tips for making data discs

- When there are more than eight groups, the eighth group onwards will be displayed on one vertical line in the menu screen.
- There may be differences in the display order on the menu screen and computer screen.
- This unit cannot play files recorded using packet write.

DVD-RAM
- Discs must conform to UDF 2.0.

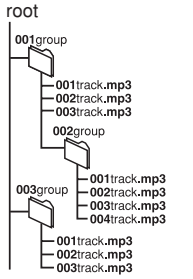
DVD-R/RW
- Discs must conform to UDF bridge (UDF 1.02/ISO9660).
- This unit does not support multi-session. Only the default session is played.

CD-R/RW
- Discs must conform to ISO9660 level 1 or 2 (except for extended formats).
- This unit supports multi-session but if there are many sessions it takes more time for play to start. Keep the number of sessions to a minimum to avoid this.

Naming folders and files

Files are treated as contents and folders are treated as groups on this unit.
At the time of recording, prefix folder and file names. This should be with numbers that have an equal number of digits, and should be done in the order you want to play them (this may not work at times). Files must have the extension (➡ see below).

Example: MP3



WMA (Extension: ".WMA" or ".wma")
- Compatible compression rate: between 48 kbps and 320 kbps.
- You cannot play WMA files that are copy-protected.
- This unit does not support Multiple Bit Rate (MBR).

MP3 (Extension: ".MP3" or ".mp3")
- Compatible compression rate: between 32 kbps and 320 kbps.
- This unit does not support ID3 tags.
- Compatible sampling rates:
  – DVD-RAM, DVD-R/RW: 11.02, 12, 22.05, 24, 44.1 and 48 kHz
  – CD-R/RW: 8, 11.02, 12, 16, 22.05, 24, 32, 44.1 and 48 kHz

JPEG (Extension: ".JPG", ".jpg", ".JPEG" or ".jpeg")
- JPEG files taken on a digital camera that conform to DCF Standard (Design rule for Camera File system) Version 1.0 are displayed. Files that have been altered, edited or saved with computer picture editing software may not be displayed.
- This unit cannot display moving pictures, MOTION JPEG and other such formats, and still pictures other than JPEG (Example: TIFF), or play pictures with attached audio.

Disc handling precautions

- Do not attach labels or stickers to discs. This may cause disc warping, rendering it unusable.
- Do not write on the label side with a ball-point pen or other writing instrument.
- Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.
- Do not use scratch-proof protectors or covers.
- Do not use the following discs:
  – Discs with exposed adhesive from removed stickers or labels (rented discs, etc).
  – Discs that are badly warped or cracked.
  – Irregularly shaped discs, such as heart shapes.

■ To clean discs
- Wipe with a damp cloth and then wipe dry.

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Using the radio

Manual tuning

1 To select "FM".

SELECTOR (main unit) **OR** FM (remote control)

2 To select "MANUAL".

(main unit)

3 To select the frequency.

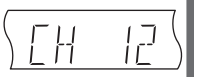
(main unit) **OR** SLOW/SEARCH (remote control)

Press and hold [∨ TUNE ∧] until the frequency starts scrolling to start automatic tuning. Tuning stops when a station is found.

Presetting the channel

Up to 30 stations can be set for FM.

1. **While listening to the radio broadcast**
   Press [ENTER].
2. **While the frequency and "PGM" are flashing on the display**
   Press the numeric buttons to select a channel.
   - To select a 2-digit number
     Example: To select 12,



   - Alternatively, press [∨, ∧], then press [ENTER].

The station occupying a channel is erased if another station is preset to that channel.

Selecting the preset channels

1 To select "FM".

FM

2 To select the channel.

1 TO -/- - ≧10

- Alternatively, press [∨, ∧].
- To perform the step on the main unit, first press [-TUNE MODE] to select "PRESET", and then press [∨ TUNE ∧] to select the channel. When a stereo FM broadcast is being received, "ST" lights in the display.

If noise is excessive in FM

Main unit only

Press and hold [–FM MODE] to display "MONO".
Press and hold [–FM MODE] again to cancel the mode. The mode is also cancelled when you change the frequency.

Automatic presetting

1 To select "FM".

SELECTOR (main unit) **OR** FM (remote control)

2 Press and hold.

(main unit) **OR** ENTER (remote control)

Release the button when "FM AUTO" is displayed.

The tuner tunes to the lowest frequency and starts to preset all the stations it can receive into the channels in ascending order.

- "SET OK" is displayed when the stations are set, and the radio tunes to the last preset station.
- "ERROR" is displayed when automatic presetting is unsuccessful. Preset the channels manually (➡ see left).

Using sound effects

Note

- The following sound effects may not be available or have no effect depending on the type of source, disc as well as recording format or, when headphones are used.
- You may experience a reduction in sound quality when these sound effects are used with some sources. If this occurs, turn the sound effects off.
- It is not possible to turn on Surround Enhancer, EQ and Super Surround at the same time.

Enhancing the sound from the center speaker: Center Focus

This applies to discs where the dialogue is recorded in the center channel.
You can make the sound of the center speaker seem like it is coming from within the television.

C.FOCUS ⇨ C FOCUS ON ↔ C FOCUS OFF

- This also works when Dolby Pro Logic II is turned on.

Adjusting the amount of bass: Subwoofer level

You can adjust the amount of bass. The unit automatically selects the most suitable setting according to the type of playback source.

SW.LEVEL

- DVD-V DVD-VR
  SUB W 4 (factory preset) → SUB W 1
  ↑ SUB W 3 ← SUB W 2 ↵
- **When another source is selected**
  SUB W 2 (factory preset) → SUB W 3
  ↑ SUB W 1 ← SUB W 4 ↵

Enhancing the surround sound effect: Surround Enhancer

Automatically adjusts each speaker to enhance the surround sound effect of multi-channel audio. When playing two-channel audio, the audio of the L/R front speakers is also output through the rest of the speakers creating a surround sound effect.

-EQ -SRD ENH ⇨ SRD ENH ON ↔ SRD ENH OFF

(Press and hold)

Changing the sound quality: Equalizer Mode (EQ)

-EQ -SRD ENH ⇨

HEAVY : Adds punch to rock.
CLEAR : Clarifies higher sounds.
SOFT : For background music.
FLAT : Cancel (no effect is added). (factory preset)

- To check the current setting, press [-EQ].
- You can adjust the volume of the surround speakers to get the best surround effect (➡ page 30, Adjusting the volume of each speaker: Speaker level adjustments).
- It is not possible to turn on EQ and Surround Enhancer at the same time.

Enhancing the stereo sound: Super Surround

□□ PL II/ S.SRD ⇨

Movie : Use this mode when playing movie software.
Music : Adds surround effects to stereo sources.
Off : Cancel

- This works only in FM, Music P. and AUX mode.
- Super Surround and EQ can be turned on simultaneously.

Enhancing the stereo sound: Dolby Pro Logic II

Except DivX

Dolby Pro Logic II is an advanced decoder that derives 5-channel surround (Left and Right Front, Center, Left and Right Surround) from stereo sound sources, whether or not it has been specifically Dolby Surround encoded.

DD PL II/ S.S.R.

Movie : Movie software, recorded in Dolby Surround.
Music : Stereo sources
Off : Cancel

- This works only in DVD/CD mode.
- "DD PL II" lights when there is an effect.
- This does not work when audio is output from HDMI AV OUT terminal.

Adjusting the volume of each speaker: Speaker level adjustments

This is one of the ways to get appropriate surround effects.

Preparation

DVD

1 **While stopped and no on-screen display is shown**
To output a test signal.

TEST

L: Front left
R: Front right
LS: Left surround
C: Center
RS: Right surround

- There is no output from SW (subwoofer) channel.

2 **To set the volume level normally used for listening.**

VOLUME + −

3 **To adjust the speaker level for each speaker.**

▲ **OR** ▼

- Adjust the speaker levels to the same level as the front speakers.
  C, RS, LS: –6 dB to +6 dB

To stop the test signal
Press [TEST] again.

To adjust speaker level during play
[Effective when playing multi-channel audio or when Dolby Pro Logic II is on.]

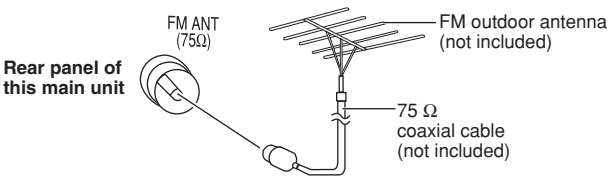
1. **Press and hold [–CH SELECT] to select the speaker.**
   L → C → R → RS → LS → SW
   SW: Subwoofer
   - You can adjust SW only if the disc includes a subwoofer channel.
   - "SW" does not appear on the display and is not adjustable when "DD PL II" is lit.
   - "S" appears on the display when "MOVIE", "MUSIC" is selected with Super Surround (➡ page 29).
     In this case, you can adjust both surround speaker levels at the same time using [▲, ▼].
     S: –6 dB to +6 dB
2. **Press [▲] (increase) or [▼] (decrease) to adjust the speaker level for each speaker.**
   C, RS, LS, SW: –6 dB to +6 dB
   (L, R: Only the balance is adjustable.)
   - To adjust the balance of the front speakers, while "L" or "R" is selected, press [◄, ►].

Operating other equipment

Optional antenna connection

Use the outdoor antenna if radio reception is poor.

FM outdoor antenna
(Using a television antenna)



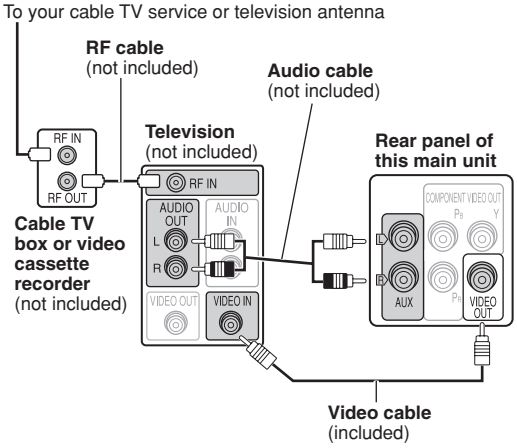
- Disconnect the FM indoor antenna.
- The outdoor antenna should be installed by a competent technician.

Note

- Disconnect the outdoor antenna when the unit is not in use.
- Do not use the outdoor antenna during a lightning storm.

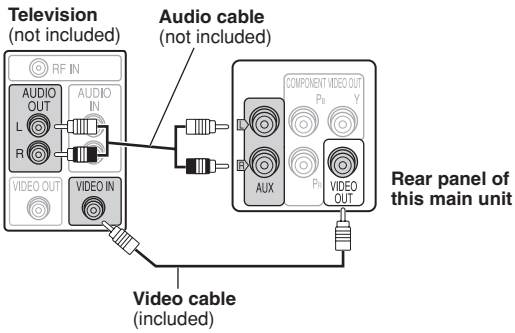
Optional connections

To your cable TV service or television antenna



This audio connection will enable you to play audio from your television through your home theater system.

Press [EXT-IN] (➡ page 13) to select “AUX” as the source to operate the audio input.



Optional Music Port connection and operation

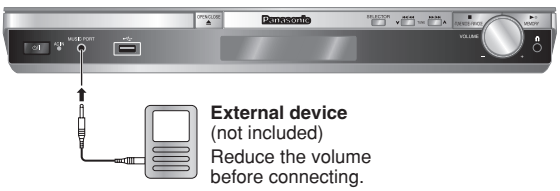
The Music Port allows you to connect and enjoy music from an external device (example: MP3 player) through your home theater system.

Preparation

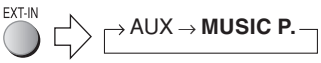
To avoid distorted sound, make sure that any equalizer function of your external device is turned off.

1 **Reduce the volume and connect the external device (not included).**

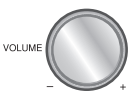
Plug type: Ø3.5 mm stereo mini plug



2 **To select “MUSIC P.”.**



3 **Adjust the external device volume to a normal listening level, and then adjust the volume of the main unit.**



- You can enjoy surround sound when you turn on Super Surround (MOVIE, MUSIC) (➡ page 29).

ENGLISH

OTHER OPERATIONS

RQTX0066

Using the VIERA Link "HDAVI Control™"

What is VIERA Link "HDAVI Control"?

VIERA Link "HDAVI Control" is a convenient function that offers linked operations of this unit, and a Panasonic television (VIERA) under "HDAVI Control". You can use this function by connecting the equipment with the HDMI cable. See the operating instructions for connected equipment for operational details.
VIERA Link "HDAVI Control", based on the control functions provided by HDMI which is an industry standard known as HDMI CEC (Consumer Electronics Control), is a unique function that we have developed and added. As such, its operation with other manufacturers' equipment that supports HDMI CEC cannot be guaranteed.
This unit supports "HDAVI Control 2" function.
The TV with "HDAVI Control 2" function enables the following operation:
VIERA Link Control only with TV's remote control (for "HDAVI Control 2") (➡ see right)

"HDAVI Control 2" is the newest standard (current as of February, 2007) for Panasonic's HDAVI Control compatible equipment.

This standard is compatible with Panasonic's conventional HDAVI equipment.

Preparation

- Confirm that the HDMI connection (➡ page 9) has been made.
- Set "VIERA Link" to "On" (➡ page 24, "HDMI" tab).
- To complete and activate the connection correctly, turn on all VIERA Link "HDAVI Control" compatible equipment and set the television to the corresponding HDMI input mode for the home theater system.

- Whenever the connection or settings are changed, reconfirm the points above.

One Touch Play

You can turn on the home theater system and television, and start playing the disc in the play position with a single press of a button.

ONE TOUCH PLAY

Theater speakers will be automatically activated (➡ see below).

- This function also works if you press [▶, PLAY] on the home theater remote control during home theater standby mode.

Note

- Playback may not be immediately displayed on the television. If you miss the beginning portion of playback, press [I◀◀] or [◀◀] to go back to where playback started.

Auto input switching

- When you switch the television input to:
  - TV tuner mode, the home theater system will automatically switch to "AUX".
  - HDMI input mode for the home theater system, the home theater system will automatically switch to "DVD/CD" if it is in "AUX" mode.
- When you start disc play, the television will automatically switch to the HDMI input mode for the home theater system.

Speaker control

You can select whether audio is output from the home theater system or the television speakers by using the television menu settings. For details, refer to the operating instructions of your television.

Home Cinema
Theater speakers are active.

- When the home theater system is in standby mode, changing the television speakers to theater speakers in the television menu will automatically turn the home theater system on and select "AUX" as the source.
- The television speakers are automatically muted.
- You can control the volume setting using the volume or mute button on the TV's remote control. (The volume level is displayed on the main unit's FL display.)
- To cancel muting, you can also use the home theater remote control (➡ page 13).
- If you turn off the home theater system, television speakers will be automatically activated.

TV
Television speakers are active.

- The volume of the home theater system is set to "0".
  - This function works only when "DVD/CD" or "AUX" is selected as the source on the home theater system.
- Audio output is 2-channel audio.

- When switching between the theater and television speakers, the TV screen may be blank for several seconds.

Power off link

When the television is turned off, the home theater system goes into standby mode automatically.

- This function works only when "DVD/CD" or "AUX" is selected as the source on the home theater system.
- When the television is turned on, the home theater system does not turn on automatically. (Power on link is not available.)

Note

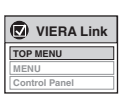
Only the home theater system turns off when you press [⏻] for shutting it down. Other connected equipment compatible with VIERA Link "HDAVI Control" stay on.

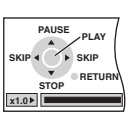
VIERA Link Control only with TV's remote control (for "HDAVI Control 2")

You can control the disc menus of the home theater system with the TV's remote control when using the "DVD/CD" source. When operating the TV's remote control, refer to the below illustration for operation buttons.

1. Select the theater operation menu by using the television menu settings.
   (For details, refer to the operating instructions of your television.)
   - The home theater system will automatically switch to "DVD/CD" if it is in "AUX" mode.

2. Select the desired item.
   - **"TOP MENU"** : Shows a disc top menu (➡ page 15, 17) or program list (➡ page 18).
   - **"MENU"** : Shows a disc menu (➡ page 15, 18) or play list (➡ page 18).
   - **"Control Panel"** : The basic operations for discs are available.





Note

- Depending on the menu, some button operations cannot be performed from the TV's remote control.
- "Control Panel" can be selected directly by using a button on the TV's remote control (e.g. [OPTION]).

Operating the television

You can use the remote control to operate a Panasonic television.
Aim the remote control at the television.

To switch the television on or off

To switch the television's video input mode

Adjust the volume

To play audio from your television through your home theater system

Preparation

Connect your equipment referring to "Connect to the various television terminals" (➡ page 9).

Press [EXT-IN] to select "AUX" as the source. Then reduce the volume on the television to its minimum, and control the volume on this main unit.

Note

- The remote control may not work properly with some models.
- You can enjoy 5.1-channel surround sound when you turn on Super Surround (MOVIE, MUSIC) (➡ page 29).

Changing the main unit and remote control

The remote control and main unit are factory-set to "REMOTE 1" mode.
If your remote control affects other equipment during operation, you can switch to operate in "REMOTE 2" mode.

To switch to "REMOTE 2" mode

1 While pressing and holding [►►/►►I] on the main unit

"REMOTE 2" appears on the main unit display.

2 To operate in "REMOTE 2" mode

(Press and hold for 2 seconds)

To return to "REMOTE 1" mode

Perform steps 1 and 2 but use [1] instead of [2] for both steps. ("REMOTE 1" appears on the main unit during step 1.)

The remote control cannot work with the main unit if their modes are different.

"REMOTE 1" or "REMOTE 2" appears on the main unit display when you operate the remote control.

- If "REMOTE 1" appears (The main unit is in "REMOTE 1" mode.)
  Press and hold [ENTER] and [1] on the remote control for at least 2 seconds.
- If "REMOTE 2" appears (The main unit is in "REMOTE 2" mode.)
  Press and hold [ENTER] and [2] on the remote control for at least 2 seconds.

Note

You can still operate a television using the remote control (➡ see above) even after switching the mode.

Troubleshooting guide

Before requesting service, make the following checks. If you are in doubt about some of the check points, or if the solutions indicated in the chart do not solve the problem, consult your dealer for instructions.

■ Power		Page
No power.	• Insert the AC mains lead securely.	8
The unit is automatically switched to the standby mode.	• The Sleep timer was working and had reached the set time limit.	13

■ Unresponsive or inoperable function		
No response when any buttons are pressed.	• This unit cannot play discs other than the ones listed in these operating instructions. • The unit may not be operating properly due to lightning, static electricity or some other external factor. Turn the unit off and then back to on. Alternatively, turn the unit off, disconnect the AC mains lead, and then reconnect it. • Condensation has formed: Wait 1 to 2 hours for it to evaporate.	11 — —
No response when remote control buttons are pressed.	• Check that the batteries are installed correctly. • The batteries are depleted. Replace them with new ones. • Aim the remote control at the remote control signal sensor and operate.	5 5 12
No picture or sound.	• Check the video or speaker connection. • Check the power or input setting of the connected equipment and the main unit. • Check that the disc has something recorded on it.	— — —
You have forgotten your ratings password. Reset all the settings to Factory Preset.	• While stopped and “DVD/CD” is the source, press and hold [■] on the main unit and [≧10] on the remote control until “Initialised” (or “Initialized”) disappears from the television. Turn the unit off and on again. All settings will return to the default values.	—
The VIERA Link function does not respond.	• Depending on the condition of the home theater system or the connected equipment, it may be necessary to repeat the same operation so that the function can work correctly.	32
Other products respond to the remote control.	• Change the remote control operating mode.	33

■ Specific operation undesirable or unexpected		
It takes time before play starts.	• Play may take time to begin when an MP3 track has still picture data. Even after the track starts, the correct play time will not be displayed. This is normal. MP3	—
Folders on a data CD are not displayed correctly. WMA MP3 JPEG	• Folders deeper than the eighth layer are displayed as the eighth layer.	—
A menu screen appears during skip or search. VCD	• This is normal for Video CDs.	—
Playback control menu does not appear. VCD with playback control	• Press [■, STOP] twice and then press [►, PLAY].	—
The program and random play functions do not work. DVD-V	• These functions do not work with some DVD-Videos.	—
Play does not start.	• This unit may not play WMA that contains still picture data. • If a disc contains CD-DA and other formats, proper playback may not be possible.	— —

■ Subtitle		
Subtitle position is wrong.	• Adjust the position. (“Subtitle Position” in Display Menu)	21
No subtitles.	• Display the subtitles. (“Subtitle” in Functions Menu)	19
Subtitles overlap the closed captions.	• Clear the subtitles.	19

■ A-B repeat

		Page
Point B is automatically set.	• The end of an item becomes point B when it is reached.	—

■ Menus

The Setup menu cannot be accessed.	• Select “DVD/CD” as the source. • Cancel program and random play.	— 16

■ Sound abnormal or improper

Sound is distorted.	• Noise may occur when playing WMA. • When using the HDMI output, audio may not be output from other terminals.	— —
Effects do not work.	• Some audio effects do not work or have less effect with some discs. • Dolby Pro Logic II does not work if you have changed the play speed.	— —
Humming is heard during play.	• An AC mains lead or fluorescent light is near the main unit. Keep other appliances and cables away from the main unit (and wireless systems).	—
No sound	• There may be a slight pause in sound when you change the play speed. • Audio may not be heard when more than 4 devices are connected with HDMI cables. Reduce the number of connected devices. • When using the HDMI connection, ensure that “Audio Output” in the “HDMI” tab is set to “On”.	— — 24

■ Picture abnormal or unviewable

The picture on the television is not displayed correctly or disappears.	• The unit and television are using different video systems. Use a multi-system or PAL television.	—
	• The system used on the disc does not match your television. – PAL discs cannot be correctly viewed on an NTSC television. – This unit can convert NTSC signals to PAL 60 for viewing on a PAL television (“NTSC Disc Output” in “Video” tab).	— 24
	• Ensure that the unit is connected directly to the television, and is not connected through a video cassette recorder.	31
	• Mobile telephone chargers can cause some disturbance.	—
	• If you are using an indoor television antenna, change to an outdoor antenna.	—
	• The television antenna wire is too close to the unit. Move it away from the unit.	—
	• Picture may not be seen when more than 4 devices are connected with HDMI cables. Reduce the number of connected devices.	—
	• When using HDMI output, the video signal is progressive. Use other video connections if your television is not compatible with progressive video.	9
	• If the picture is distorted or not displayed when using HDMI output, press and hold [CANCEL] until the picture is displayed correctly. (The output will return to “480p”or “576p”.)	—
	• When using the COMPONENT VIDEO OUT terminal, ensure that progressive output is not selected when the connected television is not progressive compatible. Press and hold [CANCEL] until the picture is displayed correctly. (The output will return to “480i” or “576i”.)	20
Picture size does not fit the screen.	• Change “TV Aspect” in the “Video” tab. • Use the television to change the aspect. If your television does not have that function, change “4:3 Aspect” in Display Menu. • Change the zoom setting. (“Just Fit Zoom” or “Manual Zoom” in Display Menu)	24 21 21, 22
Menu is not displayed correctly.	• Restore the zoom ratio to “x 1.00”. (“Manual Zoom” in Display Menu) • Set “Subtitle Position” in Display Menu to “0”. • Set “4:3 Aspect” in Display Menu to “Normal”.	22 21
Auto zoom function does not work well.	• Turn off television zoom function. • Use the other preset aspect ratios or manual adjustment. • Zoom function may not work well, especially in dark scenes and may not work depending on the type of disc.	— 22 —
When playing PAL disc, picture is distorted.	• Set “Transfer Mode” in Picture Menu to “Auto”.	21

■ Progressive video

		Page
There is ghosting when progressive or HDMI output is on.	• This problem is caused by the editing method or material used on DVD-Video, but should be corrected if you use interlaced output. Set “Video Output Mode” in Picture Menu to “480i” or “576i”. (Alternatively, press and hold [CANCEL] to switch to “480i” or “576i”.) • Disable the HDMI AV OUT connection and use other video connections. Make the settings in the following order: 1 Set “Video Mode” in the “HDMI” tab to “Off”. 2 Set “Video Output Mode” in Picture Menu to “480i” or “576i”. (Alternatively, press and hold [CANCEL] to switch to “480i” or “576i”.)	20 24 20
Pictures not in progressive output.	• Select “480p” or “576p” in “Video Output Mode” in Picture Menu. • The unit’s VIDEO OUT terminal outputs an interlaced signal even if “PRG” is displayed.	20 9
Closed captions not displayed.	• When HDMI or progressive output is on, closed captions will not be displayed.	—

■ Unit displays

The display is dark.	• Select “Bright” in “FL Dimmer” in the “Others” tab.	25
“NO PLAY”	• You inserted a disc the unit cannot play; insert one it can. • You inserted a blank disc. • You inserted a disc that has not been finalized.	11 — —
“NO DISC”	• You have not inserted a disc; insert one. • You have not inserted the disc correctly; insert it correctly.	— 14
“F61”	• Check and correct the speaker cable connections. If this does not fix the problem, consult the dealer.	8
“F76”	• There is a power supply problem. Consult the dealer.	—
“DVD U11”	• Disc may be dirty. Wipe it clean.	26
“ERROR”	• Incorrect operation performed. Read the instructions and try again.	—
“DVD H □ □” **“DVD F □ □ □”** □ stands for a number.	• Trouble may have occurred. The numbers following “H” and “F” depend on the status of the unit. Turn the unit off and then back on. Alternatively, turn the unit off, disconnect the AC mains lead, and then reconnect it. • If the service numbers fail to clear, note the service number and contact a qualified service person.	— —
“U70 □” □ stands for a number. The actual number following “U70” will depend on the state of the main unit.	• The HDMI connection acts unusually. – The connected equipment is not HDMI-compatible. – The HDMI cable is too long. – The HDMI cable is damaged.	 — — —
“REMOTE 1” or “REMOTE 2”	• Match the modes on the main unit and remote control. Depending on the number being displayed (“1” or “2”), press and hold [ENTER] and the corresponding numbered button ([1] or [2]) for at least 2 seconds.	33

■ Television displays

“⃠”	• The operation is prohibited by the unit or disc.	—
“Cannot play group xx, content xx” **“Cannot display group xx, content xx”**	• You are trying to display an incompatible group or content.	—
“Group xx, content xx is protected”	• You are trying to play a protected group or content. You cannot play it.	—
“Check the disc”	• This disc may be dirty.	—
“This disc may not be played in your region”	• Only DVD-Video discs that include or have the same region number as the one on the rear panel of this unit can be played.	Cover page
No on-screen display.	• Select “On” in “On-Screen Messages” in the “Display” tab.	25
Main unit’s screen saver remains.	• When using the HDMI connection, audio/video information is continually transferred between the main unit and the television regardless of which source has been selected on the main unit. This is normal.	—

■ Listening to the radio

Distorted sound or noise is heard. **“ST” flickers or does not light.**	• Adjust the position of the FM antenna. • Use an outdoor antenna.	— 31
A beat sound is heard.	• Turn the television off or move it away from the unit.	—

Glossary

Decoder
A decoder restores the coded audio signals on DVDs to normal. This is called decoding.

Dolby Digital
This is a method of coding digital signals developed by Dolby Laboratories. Apart from stereo (2-channel) audio, these signals can also be multi-channel audio. A large amount of audio information can be recorded on one disc using this method.

DTS (Digital Theater Systems)
This surround system is used in many movie theaters around the world. There is good separation between the channels, so realistic sound effects are possible.

Dynamic range
Dynamic range is the difference between the lowest level of sound that can be heard above the noise of the equipment and the highest level of sound before distortion occurs.

Film and video
DVD-Videos are recorded using either film or video. This unit can determine which type has been used, then uses the most suitable method of progressive output.
Film: Recorded at 25 frames per second (PAL discs) or 24 frames per second (NTSC discs). (NTSC discs recorded at 30 frames per second as well). Generally appropriate for motion picture films.
Video: Recorded at 25 frames/50 fields per second (PAL discs) or 30 frames/60 fields per second (NTSC discs). Generally appropriate for TV drama programs or animation.

Frame still and field still
Frames are the still pictures that go together to make a moving picture.
There are about 30 frames shown each second.
One frame is made up of two fields. A regular television shows these fields one after the other to create frames.
A still is shown when you pause a moving picture. A frame still is made up of two alternating fields, so the picture may appear blurred, but overall quality is high.
A field still is not blurred, but it has only half the information of a frame still so picture quality is lower.

HDMI (High-Definition Multimedia Interface)
HDMI is a next-generation digital interface for consumer electronic products. Unlike conventional connections, it transmits uncompressed digital video and audio signals on a single cable. This unit supports high-definition video output (720p,1080p) from the HDMI AV OUT terminal. To enjoy high-definition video, a high-definition compatible television is required.

I/P/B
MPEG 2, the video compression standard adopted for use with DVD-Video, codes frames using these 3 picture types.
I: Intra coded picture
This picture has the best quality and is the best to use when adjusting the picture.
P: Predictive coded picture
This picture is calculated based on past I or P-pictures.
B: Bidirectionally-predictive coded picture
This picture is calculated by comparing past and future I and P-pictures so it has the lowest volume of information.

JPEG (Joint Photographic Experts Group)
This is a system used for compressing/decoding color still pictures. If you select JPEG as the storage system on digital cameras, etc., the data will be compressed to 1/10–1/100 of its original size. The benefit of JPEG is less deterioration in picture quality considering the degree of compression.

Linear PCM (Pulse Code Modulation)
These are uncompressed digital signals, similar to those found on CDs.

MP3 (MPEG Audio Layer 3)
An audio compression method that compresses audio to approximately one tenth of its size without any considerable loss of audio quality.

Playback control (PBC)
If a Video CD has playback control, you can select scenes and information with menus.

Progressive/Interlaced
The PAL video signal standard has 576 interlaced (i) scan lines, whereas progressive scanning, called 576p, uses twice the number of scan lines. For the NTSC standard, these are called 480i and 480p respectively.
Using progressive output, you can enjoy the high-resolution video recorded on media such as DVD-Video. Your television must be compatible to enjoy progressive video.

Sampling frequency
Sampling is the process of converting the heights of sound wave (analog signal) samples taken at set periods into digits (digital encoding).
Sampling frequency is the number of samples taken per second, so larger numbers mean more faithful reproduction of the original sound.

WMA (Windows Media™ Audio)
WMA is a compression format developed by Microsoft Corporation. It achieves the same sound quality as MP3 with a file size that is smaller than that of MP3.

Specifications

AMPLIFIER SECTION

RMS Output Power: Dolby Digital Mode

Front Ch	125 W per channel (3 Ω), 1 kHz, 10 % THD
Surround Ch	125 W per channel (3 Ω), 1 kHz, 10 % THD
Center Ch	250 W per channel (6 Ω), 1 kHz, 10 % THD
Subwoofer Ch	250 W per channel (6 Ω), 100 Hz, 10 % THD
Total RMS Dolby Digital mode power	1000 W

DIN Output Power: Dolby Digital Mode

Front Ch	75 W per channel (3 Ω), 1 kHz, 1 % THD
Surround Ch	75 W per channel (3 Ω), 1 kHz, 1 % THD
Center Ch	145 W per channel (6 Ω), 1 kHz, 1 % THD
Subwoofer Ch	145 W per channel (6 Ω), 100 Hz, 1 % THD
Total DIN Dolby Digital mode power	590 W

FM TUNER, TERMINALS SECTION

Preset Memory	FM 30 stations
Frequency Modulation (FM)	
Frequency range	87.50 to 108.00 MHz (50-kHz step)
Sensitivity	1.8 µV (IHF)
S/N 26 dB	1.4 µV
Antenna terminals	75 Ω (unbalanced)
Phone jack	
Terminal	Stereo, 3.5 mm jack
Music Port (Front)	
Sensitivity	100 mV, 1.4 kΩ
Terminal	Stereo, 3.5 mm jack

DISC SECTION

Discs played (8 cm or 12 cm)

(1) DVD (DVD-Video)
(2) DVD-RAM (DVD-VR, MP3※2, ※5, JPEG※4, ※5)
(3) DVD-R (DVD-Video, DVD-VR, MP3※2, ※5, JPEG※4, ※5)
(4) DVD-R DL (DVD-Video, DVD-VR)
(5) DVD-RW (DVD-Video, DVD-VR, MP3※2, ※5, JPEG※4, ※5)
(6) +R/+RW (Video)
(7) +R DL (Video)
(8) CD, CD-R/RW [CD-DA, Video CD, SVCD※1, MP3※2, ※5, WMA※3, ※5, JPEG※4, ※5, HighMAT Level 2 (Audio and Image)]

※1 Conforming to IEC62107
※2 MPEG-1 Layer 3, MPEG-2 Layer 3
※3 Windows Media Audio Ver.9.0 L3
Not compatible with Multiple Bit Rate (MBR)
※4 Exif Ver 2.1 JPEG Baseline files
Picture resolution: between 160x120 and 6144x4096 pixels (Sub sampling is 4:0:0, 4:2:0, 4:2:2 or 4:4:4). Extremely long and narrow pictures may not be displayed.
※5 The total combined maximum number of recognizable audio and picture contents and groups: 4000 audio and picture contents and 400 groups.

Pick up	
Wavelength (DVD/CD)	662/785 nm
Laser power (DVD/CD)	CLASS 1/CLASS 1M
Audio output (Disc)	
Number of channels	5.1ch (FL, FR, C, SL, SR, SW)

VIDEO SECTION

Video system	PAL625/50, PAL525/60, NTSC
Composite video output	
Output level	1 Vp-p (75 Ω)
Terminal	Pin jack (1 system)
Component video output (NTSC: 480p/480i, PAL: 576p/576i)	
Y output level	1 Vp-p (75 Ω)
P_B output level	0.7 Vp-p (75 Ω)
P_R output level	0.7 Vp-p (75 Ω)
Terminal	Pin jack (Y: green, P_B: blue, P_R: red) (1 system)
HDMI AV output	
Terminal	Type A connector (19 pin)

This unit supports “HDAVI Control 2” function.

SPEAKER SECTION

Front speakers SB-HF450

Type	1 way, 1 speaker system (Bass reflex)
Speaker unit(s)	Impedance 3 Ω
Full range	6.5 cm Cone type
Input power (IEC)	125 W※ (Max)
Output sound pressure	80 dB/W (1.0 m)
Frequency range	95 Hz to 25 kHz (–16 dB)
	120 Hz to 22 kHz (–10 dB)
Dimensions (W x H x D)	92 mm x 142 mm x 95 mm
Mass	0.6 kg

Surround speakers SB-HS450

Type	1 way, 1 speaker system (Bass reflex)
Speaker unit(s)	Impedance 3 Ω
Full range	6.5 cm Cone type
Input power (IEC)	125 W※ (Max)
Output sound pressure	80 dB/W (1.0 m)
Frequency range	95 Hz to 25 kHz (–16 dB)
	120 Hz to 22 kHz (–10 dB)
Dimensions (W x H x D)	92 mm x 142 mm x 95 mm
Mass	0.6 kg

Center speakers SB-HC450

Type	1 way, 2 speaker system (Bass reflex)
Speaker unit(s)	Impedance 6 Ω
1. Full range	6.5 cm Cone type
2. Full range	6.5 cm Cone type
Input power (IEC)	250 W※ (Max)
Output sound pressure	82 dB/W (1.0 m)
Frequency range	80 Hz to 25 kHz (–16 dB)
	96 Hz to 22 kHz (–10 dB)
Dimensions (W x H x D)	270 mm x 94 mm x 95 mm
Mass	1.3 kg

Subwoofer SB-HW550

Type	1 way, 1 speaker system (Bass reflex)
Speaker unit(s)	Impedance 6 Ω
Woofer	16 cm Cone type
Input power (IEC)	250 W (Max)
Output sound pressure	81 dB/W (1.0 m)
Frequency range	31 Hz to 220 Hz (–16 dB)
	37 Hz to 180 Hz (–10 dB)
Dimensions (W x H x D)	153 mm x 415 mm x 257 mm
Mass	3.6 kg

GENERAL

Power supply	AC 230 to 240 V, 50 Hz
Power consumption	135 W
Dimensions (W x H x D)	430 mm x 60 mm x 364.4 mm
Mass	Main unit approx. 3.5 kg
Operating temperature range	+5 °C to +35 °C (+41 °F to +95 °F)
Operating humidity range	5 % to 90 % RH (no condensation)
Power consumption in standby mode	approx. 0.8 W

※Rating with low-cut filter equipped amplifier

Note

1. Specifications are subject to change without notice. Weight and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

Language code list

Abkhazian:	6566	Danish:	6865	Italian:	7384	Norwegian:	7879	Swedish:	8386
Afar:	6565	Dutch:	7876	Japanese:	7465	Oriya:	7982	Tagalog:	8476
Afrikaans:	6570	English:	6978	Javanese:	7487	Pashto, Pushto:	8083	Tajik:	8471
Albanian:	8381	Esperanto:	6979	Kannada:	7578	Persian:	7065	Tamil:	8465
Ameharic:	6577	Estonian:	6984	Kashmiri:	7583	Polish:	8076	Tatar:	8484
Arabic:	6582	Faroese:	7079	Kazakh:	7575	Portuguese:	8084	Telugu:	8469
Armenian:	7289	Fiji:	7074	Kirghiz:	7589	Punjabi:	8065	Thai:	8472
Assamese:	6583	Finnish:	7073	Korean:	7579	Quechua:	8185	Tibetan:	6679
Aymara:	6589	French:	7082	Kurdish:	7585	Rhaeto-Romance:	8277	Tigrinya:	8473
Azerbaijani:	6590	Frisian:	7089	Laotian:	7679	Romanian:	8279	Tonga:	8479
Bashkir:	6665	Galician:	7176	Latin:	7665	Russian:	8285	Turkish:	8482
Basque:	6985	Georgian:	7565	Latvian, Lettish:	7686	Samoan:	8377	Turkmen:	8475
Bengali; Bangla:	6678	German:	6869	Lingala:	7678	Sanskrit:	8365	Twi:	8487
Bhutani:	6890	Greek:	6976	Lithuanian:	7684	Scots Gaelic:	7168	Ukrainian:	8575
Bihari:	6672	Greenlandic:	7576	Macedonian:	7775	Serbian:	8382	Urdu:	8582
Breton:	6682	Guarani:	7178	Malagasy:	7771	Serbo-Croatian:	8372	Uzbek:	8590
Bulgarian:	6671	Gujarati:	7185	Malay:	7783	Shona:	8378	Vietnamese:	8673
Burmese:	7789	Hausa:	7265	Malayalam:	7776	Sindhi:	8368	Volapük:	8679
Byelorussian:	6669	Hebrew:	7387	Maltese:	7784	Singhalese:	8373	Welsh:	6789
Cambodian:	7577	Hindi:	7273	Maori:	7773	Slovak:	8375	Wolof:	8779
Catalan:	6765	Hungarian:	7285	Marathi:	7782	Slovenian:	8376	Xhosa:	8872
Chinese:	9072	Icelandic:	7383	Moldavian:	7779	Somali:	8379	Yiddish:	7473
Corsican:	6779	Indonesian:	7378	Mongolian:	7778	Spanish:	6983	Yoruba:	8979
Croatian:	7282	Interlingua:	7365	Nauru:	7865	Sundanese:	8385	Zulu:	9085
Czech:	6783	Irish:	7165	Nepali:	7869	Swahili:	8387		

Maintenance

Clean this unit with a soft, dry cloth.
– Never use alcohol, paint thinner or benzine to clean this unit.
– Before using chemically treated cloth, carefully read the instructions that came with the cloth.
– Do not use commercially available lens cleaners as they may cause malfunction. (Cleaning the lens is generally not necessary although this depends on the operating environment.)

Before moving the unit, ensure the disc tray is empty.
Failure to do so will risk severely damaging the disc and the unit.

Matsushita Electric Industrial Co., Ltd.
Web Site: http://panasonic.net

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